22JU6

Beam Power Tube

NOVAR TYPE
SEPARATE GRID-No.3 BASE-PIN TERMINAL FOR "SNIVETS" CONTROL[h]

For Horizontal-Deflection-Amplifier Service in Low-B+, Black-and-White TV Receivers

Electrical:

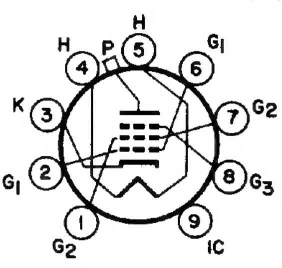
Heater Characteristics and Ratings:		
Current.	0.450 ± 0.030	amp
Voltage (AC or DC) at heater amperes = 0.450.	22.0	volts
Warm-up time (Average)	11	sec
Peak heater-cathode voltage:		
Heater negative with respect to cathode	200 max.	volts
Heater positive with respect to cathode	200[a] max.	volts
Direct Interelectrode Capacitances (Approx.)[b]:		
Grid No.1 to plate	1.2	pf
Input: G1 to (K,G3,G2,H)	22.0	pf
Output: P to (K,G3,G2,H).	9.0	pf

Mechanical:

Operating Position . . . . .Any
Type of Cathode. . . . . .Coated Unipotential
Maximum Overall Length . . . . 3.550"
Seated Length. . . . . 2.910" to 3.170"
Diameter . . . . 1.438" to 1.562"
Bulb T12
Cap. . . . . .Skirted Miniature (JEDEC No.C1-2 or C1-3)
Socket . . . . .Novar
Bases (Alternates):
Large-Button Novar 9-Pin (JEDEC No.E9-76)
Large-Button Novar 9-Pin with Exhaust Tip (JEDEC No.E9-88)
Basing Designation for BOTTOM VIEW. 9QL



Pin 1 - Grid No.2
Pin 2 - Grid No.1
Pin 3 - Cathode
Pin 4 - Heater
Pin 5 - Heater
Pin 6 - Grid No.1
Pin 7 - Grid No.2
Pin 8 - Grid No.3
Pin 9 - Do Not Use
Cap - Plate



Characteristics:

				Triode Connection[c]	
Plate Voltage.	-	50	130	125	volts
Peak Positive-Pulse Plate Voltage[d]	6500	-	-	-	volts

				Triode Connection[c]	
Grid No.3	*Connected to cathode at socket*				
Grid-No.2 Voltage	125	125	125	125	volts
Grid-No.1 Voltage	–	0	–20	–20	volts
Amplification Factor	–	–	–	4.7	
Plate Resistance (Approx.)	–	–	18000	–	ohms
Transconductance	–	–	7000	–	µmhos
Plate Current	–	470[e]	45	–	ma
Grid-No.2 Current	–	32[e]	1.5	–	ma
Grid-No.1 Voltage (Approx.) for plate ma. = 1	–75	–	–32	–	volts

HORIZONTAL-DEFLECTION AMPLIFIER

Maximum Ratings, *Design-Maximum Values:*

For operation in a 525-line, 30-frame system[f]

DC Plate Supply Voltage	770 max.	volts
Peak Positive-Pulse Plate Voltage[g]	6500 max.	volts
Peak Negative-Pulse Plate Voltage	1500 max.	volts
DC Grid-No.3 Voltage[h]	75 max.	volts
DC Grid-No.2 (Screen-Grid) Voltage	220 max.	volts
DC Grid-No.1 (Control-Grid) Voltage:		
Negative-bias value	55 max.	volts
Peak Negative-Pulse Grid-No.1 Voltage	330 max.	volts
Cathode Current:		
Peak	950 max.	ma
Average	275 max.	ma
Grid-No.2 Input	3.5 max.	watts
Plate Dissipation[j]	17 max.	watts
Bulb Temperature (At hottest point on bulb surface)	220 max.	°C

Maximum Circuit Values:

Grid-No.1 Circuit Resistance:		
For grid-No.1-resistor-bias operation[j]	0.47 max.	megohm
For plate-pulsed operation (horizontal-deflection circuits only)	10 max.	megohms

[a] The dc component must not exceed 100 volts.

[b] Without external shield.

[c] With grid No.2 connected to plate at socket.

[d] Under conditions shown in footnote[g].

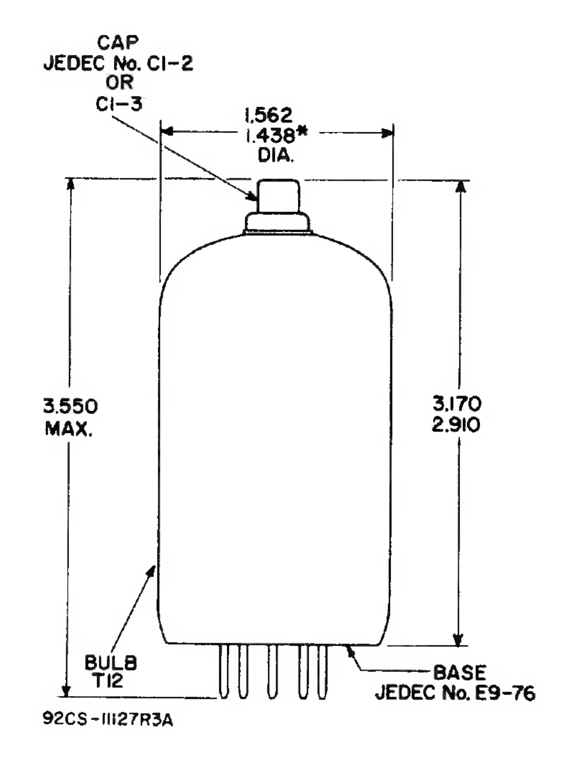
[e] This value can be measured by a method involving a recurrent waveform such that the maximum ratings of the tube will not be exceeded.

[f] As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission.

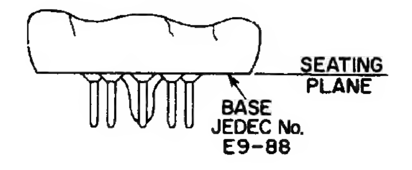
[g] This rating is applicable where the duration of the voltage pulse does not exceed 15 per cent of one horizontal scanning cycle. In a 525-line, 30-frame system, 15 per cent of one horizontal scanning cycle is 10 microseconds.

[h] In horizontal-deflection-amplifier service, a positive voltage may be applied to grid No.3 to reduce interference from "snivets" which may occur in both vhf and uhf television receivers. A typical value for this voltage is 30 volts.

[j] An adequate bias resistor or other means is required to protect the tube in the absence of excitation.



Alternative Base
Bottom Exhaust



92CS-11127R3B

DIMENSIONS IN INCHES

A detailed drawing of the E9-88 base is available from RCA, Commercial Engineering 51-2, Harrison, N.J. 07029.

*Applies to the minimum diameter except in the area of the seal.

AVERAGE PLATE CHARACTERISTICS

